

Date: Wednesday, 4/4/2007 9:05:46 AM
 User: Kim Johnston

Process Sheet

Split 2006.22

Customer : CU-DAR001 Dart Helicopters Services
 Job Number : 31615-1
 Estimate Number : 10575
 P.O. Number : N/A
 This Issue : 4/4/2007 S.O. No. : N/A
 Prsht Rev. : NC
 First Issue : N/A Type : LARGE FAB ASSY
 Previous Run : 30842
 Drawing Name : SHORT STEP ASSEMBLY HIGH SKID LH
 Part Number : D350591213
 Drawing Number : D3078 REV A
 Project Number : N/A
 Drawing Revision : A
 Material : N/A
 Due Date : 4/30/2007 Qty: 10 Um: Each
 Written By :
 Checked & Approved By :
 Comment : Est Rev:B 05-10-14 Modified step 10 KJ/EC
 Est Rev:C 06-06-19 Added D2732-030 AS PER DSI9294 JLM
 Est Rev:C 06-06-27 Revised as per DSI9340 JLM

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile and type labels as per PPP D350-591-213 CHG002

2.0 D2622120C

Extrusion



Comment: Qty.: 0.5000 Each(s)/Unit Total: 5.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2622-120C

Extrusion

B31984-8

B329607-1

D.M

07.06.19

3.0 LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Cut D2622-120 extrusion to 59.75" long as per Dwg D3078

A.M 07.06.19

2-Drill extrusion as per Dwg D3078 using Jig DT8680 for rivets.

A.M 07.06.19

3-Deburr

A.M

07.06.19

4.0 QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID LH

Job Number: 31615

Part Number: D350591213

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

D30671

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

Qty Part Number

Description Batch

1 D3067-1

End Plate 331653

KE 07-06-21 10

6.0

D30631

Support



Comment: Qty.: 1.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

Qty Part Number

Description Batch

1 D3063-1

Support 330892

KE 07-06-21 10

7.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Bevel end for welding FWD ONLY

2-Weld Support using Jig DT8681, weld Fwd End Plate as per QSI 004 & Dwg D3072

A/R Aluminum Rod M102756

3-Grind End Plate flush

KE 07-06-21 10

KE 07-06-21 10

FF 07-06-21 10

8.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

10/06/21

LA

10

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

10/06-21 10

POSITIVE RECALL

BT

10.0

HAND FINISHING1

HAND FINISHING RESOURCE #1


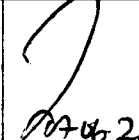
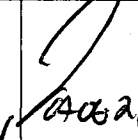


Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

a.m 02-06-21

10

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
070621	9.0	Waiting for engineering approval for a measurement on 2nd Do not pass step 16.0		070621	10	 070621	 070621	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: ☒ Date: 070711

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
070621	9.0	2 steps measured 54.5 from the support to the center of 1st hole. R.C. Cleco to hold jig in place pulled out slightly.	05/04/2	Steps acceptable. AS per discussion with David Stephens. See Attached e-mail.	N/A	070704	05/04/2	070621

NOTE: Date & initial all entries

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID LH

Job Number: 31615

Part Number: D350591213

Job Number:



Seq. #:

Machine Or Operation:

Description :

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Jan 21 (10)



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

12.0

D3065041

Step Leg Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D3065-041

Step Leg Assy

331794

PE. 07-06-21 10

13.0

D30661

Spacer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

2 D3066-1

Spacer

331834 = 15
332585 = 45

PE. 07-06-21 10

14.0

MS20600AD4W4

Rivets



Comment: Qty.: 16.0000 Each(s)/Unit Total : 160.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

16 MS20600AD4W4

Rivet

1104156 = 15

PE. 07-06-21 10

15.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

Rivet Leg Assembly as per Dwg D3078.

PE. 07-06-21 10

16.0

QC5

INSPECT WORK TO CURRENT STEP



Jan 21 (10)



Comment: INSPECT WORK TO CURRENT STEP

17.0

D30671

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

Qty Part Number

Description

Batch
331653

1 D3067-1

End Plate

PE. 07-06-21 10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID LH

Job Number: 31615

Part Number: D350591213

Job Number:



Seq. #:

Machine Or Operation:

Description:

18.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Bevel Aft end for welding

2-Inspect for foreign object as per QSI 024

3-Weld Aft End Plate as per QSI 004 & Dwg D3078
A/R Aluminum Rod M102756

4-Grind End Plate flush

KE-07-06-21 10

KE-07-06-21 10

KE-07-06-21 10

KE-07-06-21 = (5) am 07-06-21 (5)

19.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

add by 07/07/04 (8) PRO

20.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07/07/04 (8) 07/07/04 (8)

21.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1
Touch Up Chemical conversion

m-h 07/07/05

22.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING
Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

m 101575 BR/FL 07-07-06 (8)

23.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1
Wing Walk as per Dwg D3078 and QSI 005 4.4

FL/1 07/07/06 (8)

24.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: Inspect Powder Coat and Wing Walk

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
07-06-22	19.0	Split the W/O for an order. 8 on this W/O : 2 steps on the - 2	<i>[Signature]</i>	07-06-22	8	<i>[Signature]</i> 07-06-22	<i>[Signature]</i> 07-06-22

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 4/4/2007 9:05:47 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID LH

Job Number: 31615

Part Number: D350591213

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

26.0

D2182B

Neoprene Cushion-.750 bl



Comment: Qty.: 0.3000 f(s)/Unit Total : 3.0000 f(s)

Pick: Packing Kit

Qty Part Number Description

Batch

2 D2182b035 Rubber Cushion

1330872 X

27.0

D2274

Radius Block



Comment: Qty.: 4.0000 Each(s)/Unit Total : 40.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description

Batch

4 D2274 Radius Block

1330875 X

28.0

D2732

Rubber Extrusion



Comment: Qty.: 1.0500 f(s)/Unit Total : 10.5000 f(s)

Pick: Packing Kit

Qty Part Number

Description

Batch

4 D2732-030(3" LONG)

Rubber Cushion 1326472 X

29.0

D2856400

Abrasion Strip



Comment: Qty.: 0.6000 f(s)/Unit Total : 6.0000 f(s)

Pick: Packing Kit

Qty Part Number Description

Batch

1 D2856-400(7.2") Abrasion Strip

1332020 X

30.0

D22301

Mounting Lug



Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description

Batch

2 D2230-1 Clamp

30155 X

1330992 X

2/2/55

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 4/4/2007 9:05:47 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID LH

Job Number: 31615

Part Number: D350591213

Job Number:



Seq. #:

Machine Or Operation:

Description :

31.0

D22303

Mounting Lug



Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

2 D2230-3

Clamp

B30996 ✓

32.0

AN335A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

2 AN3-35A

Bolt

M104021 ✓

33.0

AN411A

Bolt



Comment: Qty.: 6.0000 Each(s)/Unit Total : 60.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

6 AN4-11A

Bolt

M102280 ✓

34.0

AN960JD10

Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total : 40.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

4 AN960JD10

Washer

M104517 ✓

35.0

AN960JD416

Washer



Comment: Qty.: 12.0000 Each(s)/Unit Total : 120.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

12 AN960JD416

Washer

M103691 ✓

36.0

MS21042L3

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

2

M103691 ✓

2/7/5 SP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
		U					

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 4/4/2007 9:05:47 AM

User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID LH

Job Number: 31615

Part Number: D350591213

Job Number:



Seq. #:

Machine Or Operation:

Description :

2 MS21042L3

Nut (or -3)

37.0

MS21042L4

Nut



Comment: Qty.: 6.0000 Each(s)/Unit Total : 60.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

6 MS21042L4 Nut (or -4)

+1

M102552 X

7/7/5 SD

38.0

AN413A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 40.0000 Each(s)

Bolt

Batch: M104118 X

7/7/5 SD (8)

39.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

6/7/10 (8)

6/20/10/10 (8)

40.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-591-213

Location: _____

PPP Rev: _____

Rev C

7/7/10 SD

41.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

7/7/11

Job Completion



U 7/7/11

POSITIVE RECALL

EFFECTIVE 7/6/21 AUTH U

RELEASED DATE 7/7/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>CP</i>	APPROVED <i>CP</i>	DRAWING NO. D3078	REV. A SHEET 1 OF 2
DATE 02.09.11		TITLE STEP ASSEMBLY, HI SHORT SCALE NTS	
A	02.09.11	NEW ISSUE	

RELEASED
02.09.20 *CP*

Part No.	Description	QTY -041	QTY -042
D3078-041	Step Assembly, High Short (LH)	X	
D3078-042	Step Assembly, High Short (RH)		X
D2622-60	STEP EXTRUSION	1	1
D3063-1	SUPPORT	1	1
D3065-041	LEG ASSEMBLY	1	1
D3066-1	SPACER	2	2
D3067-1	END PLATE	2	2
MS20600AD4W4	RIVET	16	16

GENERAL NOTES:

- 1) -041 SHOWN, FOR -042 INSTALL D3063-1 SUPPORT OPPOSITE SIDE
- 2) WELD PER DART QSI 004
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT ASSEMBLY WHITE (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. **31615**

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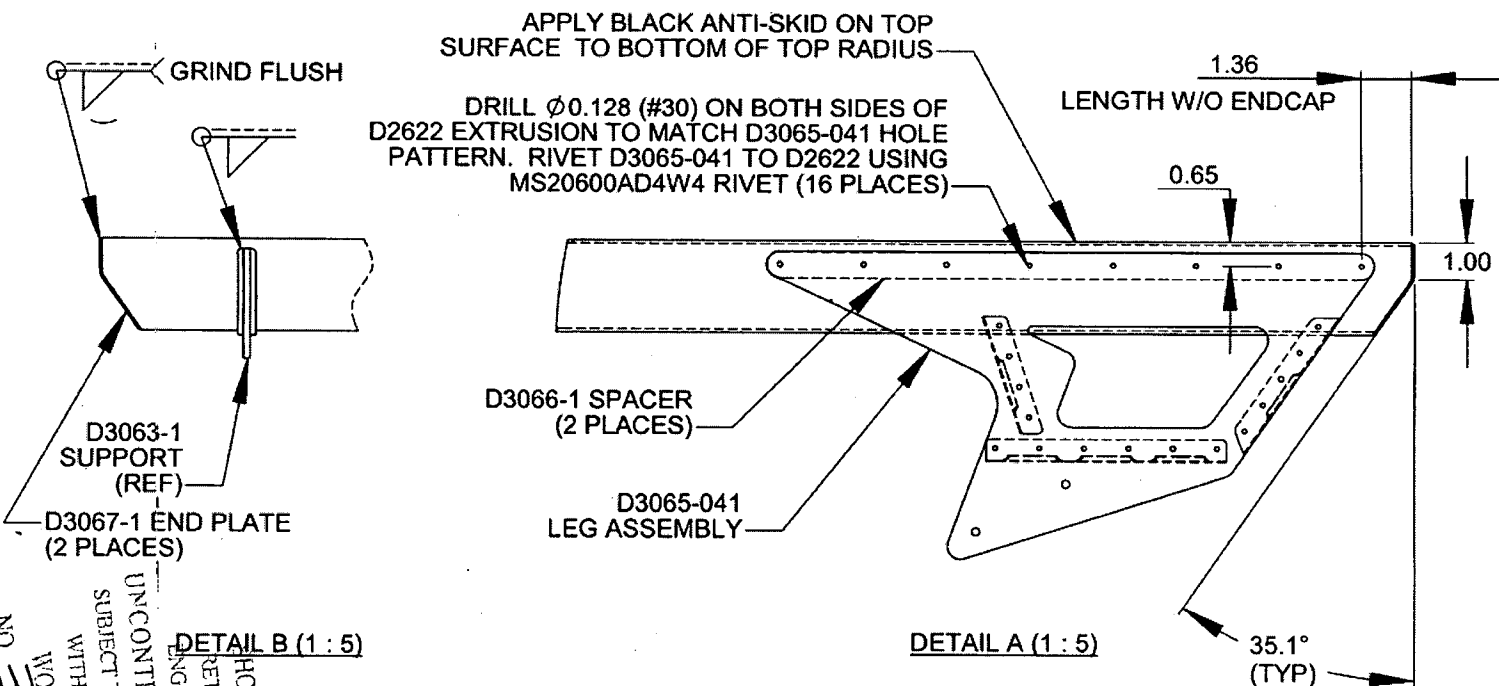
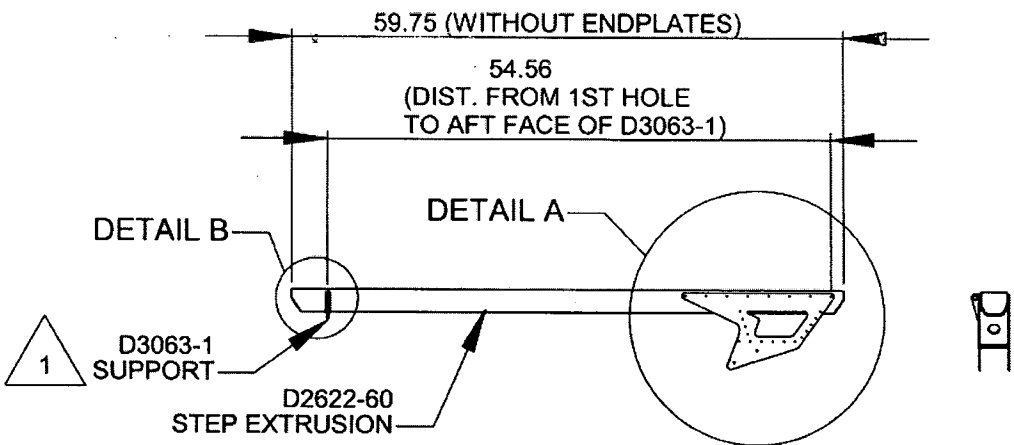
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DART



DESIGN	DRWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. A
DATE		D3078	SHEET 2 OF 2
02.09.11		TITLE	SCALE
		STEP ASSEMBLY, HI SHORT	1:20

RELEASED
02.09.2004



DETAIL B (1:5)

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ENGINEERING
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WORK ORDER
NO. 31615

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Jason Murdoch

From: David Shepherd [dshepherd@dartaero.com]
Sent: Wednesday, July 11, 2007 3:53 PM
To: 'Jason Murdoch'
Cc: 'L Lacelle'
Subject: RE: NCR D350-591-213

If the steps are only out by 0.060", then I think they are acceptable as is.

David

From: Jason Murdoch [mailto:jmurdoch@dartaero.com]
Sent: Wednesday, July 11, 2007 11:50 AM
To: 'David Shepherd'; 'David Shepherd'
Cc: 'L Lacelle'
Subject: NCR D350-591-213
Importance: High

Hi. Remember when you were down the last time, I had 2 steps that were short (on the 54.56") from the face of the aft support, to the fwd rivet hole, by 0.060" max. This appears good to me. Is this acceptable with you? I have done fits with these steps before, and there is a lot of play. I know you said to open the slot to compensate for the distance, but after re-measuring with 2 persons, the 2 were short by 0.06"max.

jmurdoch@dartaero.com
Q.C. COORDINATOR

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.476 / Virus Database: 269.10.2/894 - Release Date: 7/10/2007 5:44 PM

No virus found in this outgoing message.
Checked by AVG Free Edition.
Version: 7.5.476 / Virus Database: 269.10.2/894 - Release Date: 7/10/2007 5:44 PM